ART. IX. *Successful Ligature of the Common Iliac Artery.* By VALENTINE MOTT, M. D. Professor of Surgery in Rutgers Medical College, New York.

A DETAILED account of the first operation ever performed upon the *arteria iliaca communis*, for the cure of *aneurism*, and especially of the first attempt to apply the ligature to so great a vessel, without dividing the peritoneum, may prove interesting to the profession generally, and must be immediately serviceable to practitioners of surgery. It is therefore as an act of duty, rather than of choice, that the following statement has been prepared, during such few and brief intervals of leisure, as could be obtained amid the daily engagements and solicitudes of business.

On the 15th of March, 1827, I was requested to visit a patient with Dr. OSBORN, (of Westfield, New Jersey, about twenty-five miles distant from New York,) whom we found labouring under a large aneurism of the right external iliac artery.

Israel Crane, aged thirty-three years, by occupation a farmer, of temperate and regular habits, having generally enjoyed excellent health, says about the middle of January he felt some pain about the lower part of the belly, which he attributed to a fall received during the winter. He is in the habit of using great efforts in lifting heavy logs of wood, as his employment at this season consists in carrying wood to market. It, however, was not until a fortnight since, that he perceived any tumour about the lower part of the abdomen. Upon examination, the abdomen on the right side was considerably enlarged from about the crural arch, as high as the umbilicus. When the hand was applied to the parietes of the abdomen, a pulsation was felt and rendered visible to some distance. To the touch the tumour beat violently, and appeared to contain only fluid blood. It commenced a little above Poupart's ligament, and reached, judging by the touch, from without, near the navel—inwards, almost to the linea alba—outwards and backwards filling up all the concavity of the ilium, and reaching beyond the posterior spinous process of that bone.

The rapid increase of this aneurismal tumour occasioned, as the countenance of our patient indicated, the most extreme agony. His sufferings at times were so great that his screams could be heard at a distance from the house. He had been bled several times, taken light food, and was kept constantly under the effect of opium. He was now informed of the serious nature of his case, and that without an operation very little chance of his life remained; with great com-

posure he immediately consented to whatever would give him the best prospect of saving his life.

From the extent and situation of the tumour, he was apprised of the uncertain nature of the operation, as well as the difficulty of performing it, and indeed that it would require an artery to be tied, which never had been before operated upon for aneurism. With these views of his situation, he cheerfully submitted to be placed upon a table of suitable height in a room which was well lighted.

Then, in the presence of Dr. Osborn, Dr. Liddle, and Dr. Cross, the following operation was performed:—

The pubes and groin of the right side being shaved, an incision was commenced just above the external abdominal ring, and carried in a semicircular direction half an inch above Poupart's ligament, until it terminated a little beyond the anterior spinous process of the ilium, making it in extent about five inches. The integuments and superficial fascia were now divided, which exposed the tendinous part of the external oblique muscle, upon cutting which in the whole course of the incision, the muscular fibres of the internal oblique were exposed; the fibres of which were cautiously raised with the forceps and cut from the upper edge of Poupart's ligament. This exposed the spermatic cord, the cellular covering of which was now raised with the forceps, and divided to an extent sufficient to admit the forefinger of the left hand to pass upon the cord into the internal abdominal ring. The finger serving now as a director, enabled me to divide the internal oblique and transversalis muscles to the extent of the external incision, while it protected the peritoneum. In the division of the last mentioned muscles outwardly, the circumflexa ilii artery was cut through, and it yielded for a few minutes a smart bleeding. This, with a smaller artery upon the surface of the internal oblique muscle, between the rings, and one in the integuments were all that required ligatures.

With the tumour beating furiously underneath, I now attempted to raise the peritoneum from it, which we found difficult and dangerous, as it was adherent to it in every direction. By degrees we separated it with great caution from the aneurismal tumour, which had now bulged up very much into the incision. But we soon found that the external incision did not enable us to arrive to more than half the extent of the tumour upwards. It was therefore extended upwards and backwards about half an inch within the ilium, to the distance of three inches, making a wound in all about eight inches in length.

The separation of the peritoneum was now continued until the

fingers arrived at the upper part of the tumour, which was found to terminate at the going off of the internal iliac artery. The common iliac was next examined by passing the fingers upon the promontory of the sacrum, and to the touch appearing to be sound, we determined to place our ligature upon it about half way between the aneurism and the aorta, with a view to allow length of vessel enough on each side of it to be united by the adhesive process.

The great current of blood through the aorta made it necessary to allow as much of the primitive iliac to remain between it and the ligature as possible, and the probable disease of the artery higher than the aneurism, required that it should not be too low down. The depth of this wound, the size of the aneurism, and the pressure of the intestines downwards by the efforts to bear pain, made it almost impossible to see the vessel we wished to tie. By the aid of curved spatulas, such as I used in my operation upon the *innominata*, together with a thin, smooth piece of board, about three inches wide, prepared at the time, we succeeded in keeping up the peritoneal mass, and getting a distinct view of the arteria iliaca communis, on the side of the sacro vertebral promontory. This required great effort on our part, and could only be continued for a few seconds. The difficulty was greatly augmented by the elevation of the aneurismal tumour, and the interception it gave to the admission of light.

When we elevated the pelvis, the tumour obstructed our sight; when we depressed it, the crowding down of the intestines presented another difficulty. In this part of the operation I was greatly assisted by Dr. Osborn and my enterprising pupil, Adrian A. Kissam.

Introducing my right hand now behind the peritoneum, the artery was denuded with the nail of the forefinger, and the needle conveying the ligature was introduced from within outwards, guided by the forefinger of the left hand in order to avoid injuring the vein. The ligature was very readily passed underneath the artery, but considerable difficulty was experienced in hooking the eye of the needle, from the great depth of the wound and the impossibility of seeing it. The distance of the artery from the wound was the whole length of my aneurismal needle.

After drawing the ligature under the artery, we succeeded by the aid of our spatulas and board in getting a fair view of it, and were satisfied that it was fairly under the primitive iliac, a little below the bifurcation of the aorta. It was now tied—the knots were readily conveyed up to the artery by the forefingers—all pulsation in the tumour instantly ceased. The ligature upon the artery was very little below a point opposite the umbilicus.

The wound was now dressed with five interrupted sutures, passing them not only through the integuments, but the fibres of the cut muscles, so as to bring their divided edges together at all parts of the incision, which was muscular. Adhesive plaster to assist the stitches, lint and straps to retain it, completed the dressing. The operation lasted rather less than one hour.*

He was removed from the table, and put into bed upon his back, with the knee a little elevated upon pillows to relax the limb as much as possible, and to avoid pressure upon it. It was considerably cooler than the opposite leg, and flannels were applied all over it, and a bottle of warm water to the foot. From the habit he had been in of taking largely of anodynes, a tea-spoonful of the tinct. opii. was administered, with directions to repeat it in an hour if the pain should be severe.

In less than one hour from the operation, considerable reaction of the heart and arteries took place; he felt, as he stated, altogether relieved from the excruciating agony he had suffered since the aneurism commenced. The whole limb had now recovered its natural temperature.

March 16*th.* The day after the operation, pulse eighty, skin moist —limb warm as the other—complains of some pain at the ligature—ordered a purgative of neutral salts.

17*th.* Pulse eighty, and fuller than yesterday—took ℥x. of blood from his arm—skin moist—tongue brown—considerable uneasiness in the limb—no pain at the ligature—leg of natural heat—salts had a good effect.

18*th.* Pulse seventy-five—skin moist—tongue white—pain in the limb considerable—no pain at the ligature or in the wound—limb warm.

19*th.* Bled him to-day to ten ounces, the pulse being tense and

* Dr. Gibson, then professor of surgery in Baltimore, was near the spot during the riots in that city, when a man was wounded by a musket ball, "which entered the left side of the abdomen, passed through the intestines, opened the iliaca communis artery, and lodged in the sacrum." The doctor states, "thrusting into it, (the wound,) the forefinger of my left hand, I discovered that a very large artery had been torn across, and was pouring out blood in considerable quantity." The man died in a few days. "Upon inspecting the vessels of the abdomen," says the doctor, "I found that I had placed two ligatures upon the common iliac artery of the left side, one about half an inch below the bifurcation of the aorta, and the other immediately above the division of the artery into the external and internal iliacs." See Medical Recorder, Vol. 3, p. 185.

beating eighty strokes in a minute—repeated the cathartic—suppuration appearing to have taken place, the dressings were removed.

20*th.* Pulse seventy and soft—skin moist—wound looks well—pain in the limb continues—leg warm as the other—cathartic operated well.

21*st.* Pulse seventy and soft—wound looks well—repeated the laxative—pain in the leg rather less—continues warm. There has been at no time tension of the abdomen or any particular uneasiness in that part. The patient thus far has been altogether more comfortable than could have been imagined. He takes more or less opium daily, from the long habit he has been in of taking anodynes.

26*th.* No unpleasant symptom—wound looks well—bled again to ℥xij. as there was a little tumefaction and inflammation about the wound.

30*th.* Our patient continues to do well—wound dressed daily.

April 3*d.* Not being able to leave the city, I requested Dr. Proudfoot, my late pupil, and a most promising young surgeon, to visit the patient. He reports that he was free of fever—wound all healed but where the large ligature was passing. The ligature appearing to be detached, the doctor took hold of it and removed it: this was on the eighteenth day from the time of its application. Limb of the natural temperature—enjoined upon him to keep very quiet and in bed.

8*th.* There are no disagreeable appearances whatever—he appears to be doing remarkably well—has been bled once since the last report—takes a purgative every other day, and an opiate every night—pulse as in health—no pain—says he is entirely comfortable—wound is dressed with dry lint.

16*th.* Has improved rapidly since the last report. Two days after the ligature came away he very imprudently got out of bed without experiencing any difficulty, except weakness. Rode out to-day—wound perfectly healed.

26*th.* He has been using crutches for a few days to favour the lame leg, which, as yet, feels rather weak. General health greatly improved.

30*th.* Is perfectly restored in health—has a little stoop in his walk, which he says is occasioned by the external cicatrix. Leg is not yet of its full size, nor quite so strong as the other. From the period of the operation, to the recovery of our patient, he did not appear to suffer more pain, or have more unpleasant symptoms, than would ordinarily take place in a flesh wound of equal extent. Much of this, in my opinion, is to be attributed to the prompt and judicious antiphlogistic treatment pursued by Dr. Osborn, to whom I am indebted for the daily reports of the case.

May 29th. My patient visited me to day, having come twenty-five miles; he was so much improved in health that I did not recognize him. Examined the cicatrix and found it perfectly sound—could not discover any remains of aneurismal tumour—felt the epigastric artery much enlarged and beating strongly, and a feeble, though distinct pulsation in the femoral artery immediately below the crural arch. The leg has its natural temperature and feeling, and he says it is as strong as the other.

Much credit is due the patient for his firmness on the occasion; although apprised of the great danger attending so formidable an experiment, and the uncertainty of its result; yet with a fortitude unshaken, and a full conviction that it was the only chance of prolonging his life, he cheerfully and resolutely submitted to the operation.

The gratification his visit afforded me is not to be imagined, save by those who have been placed under similar circumstances. The perfect success of so important and novel an operation, with the entire restoration of the patient's health, was a rich reward for the anxiety I experienced in the case, and in a measure compensated for the unexpected failure of my operation on the *arteria innominata.*

New York, 25 Park Place, October 15th, 1827.

ART. X. *Notices of some Anomalous Cases of Dropsy.* By N. CHAPMAN, M. D.

IT is a common remark of writers, that in the commencement, as well as throughout the subsequent stages of dropsy, particularly ascites, there is sometimes almost as much distress from flatulence, as by the accumulation of the fluid. For this and several other reasons, I once thought it not unlikely, that occasionally the blood-vessels may, instead of a serous effusion, secrete a gas, which by some process not understood, might be converted into a fluid state. That the blood-vessels are capable, and do exercise such an office, has been shown by Mr. HUNTER, and is rendered probable by a variety of facts. Dropsy, I have seen in several instances to follow flatulent colic—and I had, some years ago, under my care, in consultation with the late Dr. WISTAR, the case of a boy, which strongly supports the hypothesis.

Having become heated and fatigued by skaiting, he laid on the ice, and after a time, was seized with colic, attended by a distention of the abdomen, amounting to tympanites. By carminatives, opiates,